2

3

4

5

6 7

8

9

10 11

12

13

14

15

16

17

WHAT IS CLAIMED IS:

1 A laboratory analyzer system comprising a base housing (1); a sample tray (4) movably supported on the base housing; at least two holding accommodations (5) arranged on the sample tray (4) for holding a sample container (32) for a sample that is to be analyzed; a drive mechanism (2) arranged inside the base housing and operable to move the sample tray (4) so that the sample container (32) is advanced in a stepwise motion along a prescribed track; an analyzer module installed on the base housing along the prescribed track and operable to analyze the sample as it arrives at the analyzer module; and a lid-opening device (50) arranged along the prescribed track at a location that the sample container (32) reaches before it arrives at the analyzer module (16), said lidopening device (50) being operable to open a lid (32') by which the sample container (32) may be covered, said lid (32') having a predetermined shape and thickness (H).

- 1 The analyzer system of claim 1, wherein the lid-2 opening device (50) comprises an electromagnet (51) energizable through a switch (S) and configured to hold 3 the lid (32') in an open position.
- 3. The analyzer system of claim 2, wherein the electromagnet (51) comprises a U-shaped core (52, 53, 54)

- 3 with poles (52, 53) facing the lid (32').
- 1 4. The analyzer system of claim 3, wherein the lid
- 2 (32') has a thickness (H) and the electromagnet (51) is
- 3 installed in a stationary condition in the lid-opening
- 4 device (50) at a distance from the lid (32') corresponding
- 5 to at least twice the thickness (H).
- The analyzer system of claim 1, wherein the lid-
- 2 opening device (50) is adapted to be installed on the base
- 3 housing (1) by means of a non-destructively releasable
- 4 mounting arrangement (17) consisting of at least two
- 5 parts.
- 1 6. The analyzer system of claim 1, wherein the drive
- 2 mechanism (2) is a rotary drive mechanism and the sample
- 3 tray (4) is disk-shaped and driven in rotary movement by
- 4 the rotary drive mechanism.
- The analyzer system of claim 6, wherein the
- 2 holding accommodations (50) are positioned along a circle
- 3 at equal angular intervals and the lid-opening device (50)
- 4 is offset from the analyzer module (16) by only one of
- 5 said angular intervals.
- 1 8. The analyzer system of claim 2, wherein the
- 2 analyzer module (16) is adapted to cooperate with a

- 3 control arrangement comprising at least one program to
- 4 control the movements of the analyzer system, said at
- 5 least one program having steps by which
- 6 a) the lid-opening device (50) can be actuated to remove
- 7 and hold the lid (32'),
- 8 b) the sample container (32) is advanced to the analyzer
- 9 module (16), so that an analysis can be performed,
- 10 c) the sample container (32) is returned to the lid-
- opening device (50) and the lid (32') is set back on
- 12 the sample container (32),
- d) a next following sample container is advanced to the
- 14 lid-opening device (50).
 - 1 9. The analyzer system of claim 2, wherein the
 - 2 analyzer module (16) is adapted to cooperate with a
 - 3 control arrangement comprising at least one program to
- 4 control the movements of the analyzer system, said at
- 5 least one program having steps by which
 - a) the lid-opening device (50) can be actuated to remove
- 7 the lid (32') from the sample container (32),
- 8 b) an immediately preceding sample container is returned
- 9 from the analyzer module (16) to the lid-opening device
- 10 (50) and the lid (32') held from step a) is placed on
- 11 said preceding sample container,
- 12 c) the sample tray (4) is advanced so that the sample
- 13 container (32) is moved to the analyzer module (16) for
- 14 an analysis to be performed, while at the same time a

M505-US